ABSTRACT

According to one embodiment, an antenna beam pattern is used to send a communication signal to a user. For example, the antenna beam pattern can be formed using adaptive antenna array technology on the forward link of a wireless communication system. A control signal from the user is used to determine a statistic. For example, the control signal can be a power control bit sent by the user on the return link. The statistic can be an average of the power control bit values over a specified time interval. The statistic is used to narrow the antenna beam pattern and direct it toward the user. For example, a dithering algorithm can be used to optimize the antenna beam pattern. After a call is completed, an optimized antenna beam pattern specific to each user can be stored for the next call to make the optimizing process faster and more efficient.